Wilder-Highlands Mountain Pine Beetle Response

Proposed Project Design Features and Monitoring

PROJECT DESIGN FEATURES

The following design features would be included to provide for consistency with the Forest Plan and other guidance, and or they would minimize potential impacts to the applicable resources. During implementation, if changes are needed to optimize treatment effectiveness, the implementation project lead (Foresters/Contract Administrators) will work with the corresponding specialist to come up with a solution to maintain the intend of the design feature.

BEETLE MEASURE

- Sanitation is the first priority and should be executed before beetle flight in July. However, sanitation, thinning, salvage, and susceptible stand treatment could continue through beetle flight. After flight, additional recon and tree marking should be done to identify new trees that beetles attacked during flight. These trees can then be removed with the original prescription.
- Beetle infested logs/wood should be removed from the site and at least 3 miles away from susceptible hosts.
- If infested logs cannot be removed from site, mastication is recommended.

FIRE/FUELS

- Treatment units that directly boarder private lands would have slash piled and burned within 1000 feet of the private lands boundary or as determined by the Silviculture and Fuels specialist to create a fuel break.
- Treatment areas outside of 1000 feet from private lands would follow forest plan standards for slash as identified in the GMUG land and resource management plan—10 to 20 tons of woody debris per acre.
- Slash Piles
    - Mechanized or machine slash piles would not be less than 12 feet in height. Piles shall not be constructed as windrows, rather the size of each pile's footprint shall be minimized. The size of each pile's footprint shall not exceed 50 feet in any dimension.
    - Hand piles would resemble a round mound approximately 13' long x 13' wide x 7' high to facilitate burning.
    - Piles would be constructed in a manner that excludes dirt/other non-burnable material.

This reduce fuel loading would directly influence fire behavior, initiation of crown fire, fire line intensities and flame lengths that dictate strategy and tactics of wildfire operations. When complete, this project would help to create defensible space adjacent to private property and would help increase safety margins for firefighters while engaged in desired and undesired wildfire events.

WATER QUALITY/SOIL PRODUCTIVITY

- All operations will conform to the direction provided in Chapter 10 of the Water Conservation Practices Handbook (WCPH), FSH 2509.25 Chapter 10. The various measures may be achieved through avoidance, on-the-ground marking, appropriate contract provisions, identification on the sale area map, or during sale administration.
- Limit ground skidding to slopes of 35% or less to reduce potential soil erosion.
- Operate heavy equipment for land treatments only when soil moisture is below the plastic limit *(a rolled thread of soil 1/8" in diameter crumbles or cracks when the soil moisture content is below the plastic limit)*, or protected by at least 1 foot of packed snow or 2 inches of frozen soil.

- Minimize the use of post-harvest slash piling and site preparation in order to maintain 10-15 tons per acre of coarse woody debris within harvest units (outside of fuel break area) and to protect nutrient rich litter layers and surface A horizons. Limbs and tops (fine fuels) should be lopped and scattered to retain nutrients concentrated in crown materials on site.
- Reclaim roads, landings and other disturbed sites when project-related use ends, as needed, to prevent resource damage.
- Remove road ditches & ditch relief culverts, site-prepare, drain (install water bars, out- slope, or re-contour), de-compact (rip to a depth of 6 to 8 inches, and do not rip if surface rock fragments are greater than 40%), re-vegetate by seeding and mulching with weed free straw or logging slash, and close system roads to be decommissioned, temporary, and intermittent use roads and other disturbed sites within one year after use ends.
- The minimum horizontal width of the Water Influence Zone for various water related features is as follows:

Feature	Outside Edge of WIZ	No Harvest or Mechanical Travel Zone
Fens and their associated wetlands	100 ft minimum from edge of fen	100 ft from edge of fen
Perennial Streams	100 ft. from stream bank	50 ft from stream bank
Intermittent Streams, Reservoirs and Ponds	50 ft. from bank or high water line	25 ft from bank or high water line
Wetlands ≥ ¼ acre	100 ft. from edge of wetland	50 ft from edge of wetland
Springs/Seeps/Wetlands/ depression recharge areas < ¼ acre	50 ft. from the source or edge of associated wetland, whichever is greater	25 ft from the source of edge of associated wetland, whichever is greater
Ephemeral Streams and Swales	25 ft from the channel or topographic low	
Ditch	Edge of Right of Way	

- Keep heavy equipment out of streams, swales and lakes, except to cross at designated points, build crossings, or do restoration work or if protected by at least 1 foot of packed snow or 2 inches of frozen soil. Keep heavy equipment out of streams during fish spawning, incubation, and emergence periods. Do not excavate earth material from, or store excavated earth material in, any stream, swale, lake, wetland, or WIZ.
- Limit roads and other disturbed sites to the minimum feasible number, width, and total length.
- Design all roads, trails, and other soil disturbances to the minimum standard for their use and to "roll" with the terrain as feasible *in order to limit the use of cuts and fills.*
- Use filter strips, and sediment traps if needed, to keep all sand-sized sediment on the land and disconnect disturbed soil from streams, lakes, and wetlands. Disperse runoff into filter strips.
- Skid trail locations will be agreed to by the Forest Service in advance of construction, and will be located to minimize impacts to advanced regeneration; spacing will be approximately 100 feet apart, allowing for topographic variation and skid trail convergence. Skid trails will be waterbarred at least every 100 feet on slopes greater than 20% or as needed depending on slope and ground conditions and slash placed on main trails as needed to control erosion.
- Space water bars and rolling dips according to road grade and soil type as indicated below:

Unified Soil Classification - ASTM D 2487[1]				
Slope (%)	ML, SM Extr. Erodible Silts-sands with little or no binder (d.g.)	MH, SC, CL Highly Erodible Silts-sands with moderate binder	SW, SP, GM, GC Mod. Erodible Gravels + fines & sands with little or no fines	GW, GP Low Erodible Gravels with little or no fines
1-3	200	300	400	500
4-6	125	200	300	400
7-9	100	150	200	250
10-12	70	100	150	200
13-25	50	50	75	100
25+	30-50	30-50	60-75	80-100

[1] American Society for Testing Materials, standard classification of soil for engineering purposes.

- Place new sources of chemical and pathogenic pollutants where such pollutants will not reach surface or ground water.
- Ensure that all designed road drainage features are fully functional and effective throughout the operational periods.

RANGE AND INVASIVE WEEDS

- All rangeland improvements will be identified in the timber sale or service contract as protected features.
- Timber sale contract provision for the control of noxious weed proliferation will be included in the timber sale contract where needed.
- Control noxious weed populations within treatment areas, during and after vegetation treatment. Weed treatment will emphasize infestations on existing landings, skid trails, and haul roads, and will occur over multiple years – as needed.
- Retain native vegetation to the extent possible to prevent weed germination and establishment, in and around sale area activity and keep soil disturbance to a minimum.
- Timber purchasers and contractors will re-seed disturbed areas (as designated by the Forest Service) with certified weed free source using San Luis slender wheatgrass or another acceptable seed mix (as determined by agency officials) to avoid introduction of exotics and promote re- vegetation of native species. Species of seed and mixtures ratios for re-seeding activities will be determined on a site-specific basis.

WILDLIFE

- Maintain 10 - 15 tons per acre of downed wood (woody material >3” diameter) within harvest units outside of the fuel break areas.
- Maintain large diameter downed logs in various stages of decomposition within harvest units (50 linear feet/acre of 10 inches diameter or larger at the large end of lodgepole pine and aspen logs) outside of fuel break areas.
- For lodgepole pine stands, maintain a minimum of 300 snags per 100 acres, with a minimum DBH of 10”, where physically and biologically capable outside of fuel break areas. Snags do not need to be retained on every acre.
- Northern goshawk - no activities will be allowed within ½ mile of active nests from March 1 to July 31 or until fledging has occurred. The timing restriction buffer could be reduced to ¼ mile if topographic features and/or adequate screening cover are present that would protect the nest site from disturbance. No harvest activities will be allowed within a 30-acre buffer of nest sites. Outside of a 30-acre area around goshawk nest sites, timing restrictions are not needed for project layout, marking, and any other activities

that are non-disturbing (i.e., activities not involving the use of heavy equipment or chainsaws). Timing restrictions will only apply to active nests, as confirmed by the district wildlife biologist.

- On-going surveys for raptors would be conducted to determine locations of individuals or populations of these species and allow for the implementation of protection measures as appropriate.
- Place landings in areas without advanced tree regeneration if available, to protect understory. Areas supporting live advanced regeneration will be avoided during unit layout.
- Roads to access portions of the project area occur in Gunnison Sage-Grouse designated critical habitat. Access routes in designated critical habitat will not be used from March 15 – May 15.
- The operational period does not overlap winter months, but does include flexibility to adjust future treatment periods according to monitoring data. If the operational period is adjusted, do not operate from December 1 to April 15 to avoid disturbing deer and elk on winter range.

TRANSPORTATION SYSTEM

- New temporary roads, or other non-system roads, built and/or used during logging activities and following logging will remain closed to the general public to minimize wildlife disturbance, and will be effectively closed to all motorized use within 3 years after harvesting activities are completed.
- Surface rock replacement deposits will be collected to maintain currently surfaced roads that are used for timber hauling. Road maintenance deposits will be collected on any system road used for timber hauling. Deposits will be collected commensurate with the use.
- Timber hauling operations will be restricted during wet or thawed conditions, when needed to protect the road surface.
- Safety signing will be used to alert the public that logging operations are in progress and would meet the requirements of the Manual of Uniform Traffic Control Devices (MUTCD).

SILVICULTURE

- All regeneration cutting will meet stocking standards as defined in the Forest Plan in accordance with NFMA.
- All vegetation treatments will be prescribed by a U.S. Forest Service, Region 2, Certified Silviculturist.
- During site preparation or piling activities, mineral soil exposure will be less than 40% of the treated area.

AIR QUALITY

- Slash disposal to be accomplished by burning piles would be conducted in a manner, which complies with the State of Colorado air quality guidelines.

CULTURAL RESOURCES

- Cultural resource surveys will occur prior project implementation. Locations of all known cultural resource sites needing protection would be shown on internal working maps not subject to disclosure and/or identified on the ground so that these areas are avoided and protected during all phases of project implementation.
- If any new cultural resource sites are discovered during implementation, project activities would stop and the agency archeologist would be contacted immediately. The operator shall take any additional measures requested by the USFS to protect discoveries until they can be adequately evaluated by the permitted archaeologist. Within 48 hours of the discovery, the SHPO and consulting parties will be notified of the discovery and consultation will begin to determine an appropriate mitigation measure. Agency officials in cooperation with the operator will ensure that the discovery is protected from further disturbance until mitigation is completed. Operations may resume at the discovery site upon receipt of written instructions and authorization by agency officials.
- On National Forest Lands, activities involving mechanical treatment, skid trails and landing areas: For all cultural resource sites located during the field inventory or previously known, no mechanical treatment

will occur within the site boundary plus a 50 foot buffer around the site. If treatment is necessary, these sites and the 50 foot buffer will be hand treated to remove hazard trees and accumulated fuel build up.

- Activities involving road construction, temporary road construction and skid trails: For all cultural resource sites located during the field inventory or previously known, a 50 foot buffer around the site will be established. The road control line will be moved to avoid the site and the 50 foot buffer area. If the construction cannot physically be relocated and there is the potential for unidentified buried cultural remains, the construction activities in the area will be monitored by an archaeologist.
- Native American human remains: Pursuant to 43 CFR 10.4(g), the holder must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony on federal land. Further, pursuant to 43 CFR 10.4 (c) and (d), the holder must stop activities in the vicinity of the discovery that could adversely affect the discovery. The holder shall make a reasonable effort to protect the human remains, funerary items, sacred objects, or objects of cultural patrimony for a period of thirty days after written notice is provided to the authorized officer, or until the authorized officer has issued a written notice to proceed, whichever occurs first.

MONITORING

Monitoring occurs at two levels: the programmatic or Forest Plan level and the project specific level. Following are several monitoring activities relevant to this project.

PROJECT IMPLEMENTATION

General implementation of the project (sale and road design, contract preparation, contract administration, and implementation of design features) will be completed by qualified Forest Service personnel and reviewed by the District Ranger and staff on an as needed basis. Contract administration will be conducted on a regular basis and as needed to obtain acceptable contract performance. The District Ranger will review and approve project development after completion of each major step according to Forest Service procedures and guidelines.

NOXIOUS WEEDS

Disturbed areas, such as roads, landings, and skid trails, will be monitored for noxious weeds. Chemical, biological, cultural, and mechanical techniques would be used as appropriate to control populations of noxious weeds as described in the 1995 EA for the Gunnison District

Weed Management Program. All treatments of noxious weeds would follow state and federal regulations.

REFORESTATION

Regeneration surveys would be conducted on harvested sites during the first, third, and fifth years after treatment. Should this monitoring conclude that additional cultural treatments are required, such treatments would be applied.

SOILS AND WATER

Monitoring soil moisture conditions during harvest activities to assure that heavy equipment use is only occurring during periods of time when the soil is dry enough to support this use without excessive impact. Monitoring will be performed by the Timber Sale Administrator in coordination with the Forest Soil Scientist.

WILDLIFE

Species-specific monitoring will continue in the project area to validate the effectiveness of design features and to determine if species responses to the proposed project were those expected.